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I.—*On the Formation of the Tenses for Completed Action in the Latin Finite Verb.—Second Paper.*

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In a paper read before this Association at its last annual session, I attempted to discuss the difficult question of the origin and formation of the Latin perfect in *si*. The examination then made, aided by such light as could be gathered from Comparative Philology, seemed to warrant the conclusion that in this class of verbs the peculiar endings of the Latin perfect, as seen in *i*, *isti*, *it*, *imus*, *istis*, *erunt* or *ere*, may be directly derived from the reduplicated stem *esis* of the root *es*, from the original form *asasma*. Moreover, the change from *esismi*, *esisti*, etc., to the classical form *esi*, *esisti*, etc., was found to be quite inconsiderable, and the process by which it was effected to be at once simple and natural.

In the present paper I propose to examine perfects in *ui*, *vi*, and *i*, including of course the auxiliary *fui*. The discussion of this subject will involve a somewhat careful examination of the entire tense-formation of the Latin finite verb.

As an illustration of one of the primitive verbs of the language, we may take *cano*, from the Indo-European root *kan*. The original root remains unchanged in the present. The perfect is reduplicated, and in this particular is one of the few

Latin perfects which conform to the original type of the Indo-European; yet even this verb, with all its primitive features, differs widely in its tense-formations from that system of verbal inflections which the Latin, the Greek, and the Sanskrit must alike have inherited from the original mother-tongue of the family. Notice for a moment its tense-forms: *cano*, *canebam*, *canam*, *cecini*, *cecineram*, *cecinero*, *canam*, *canerem*, *cecinerim*, *cecinissem*. With the exception of *cano* and *canam*, which are in their origin present formations, and of *cecĭni*, which we are now discussing, the obvious and distinguishing characteristic of this entire group of forms is that they are all compounds of the auxiliary, as seen in *sum* and *fui*. In making this statement, however, I assume the correctness of the generally received opinion in regard to the formation of compound tenses by means of auxiliary verbs—a point which was, I think, sufficiently discussed in my former paper. Thus, *bam* in *cane-bam* is the imperfect of *bhu* (=*fu*), as *eram* is the imperfect of *es*. In the form in which they came from the mother-tongue of the Indo-European family, both *bam* and *eram* undoubtedly had the augment, though no trace of it now remains in either, unless it lies concealed in the long *ē* in *canēbam*. *Eram* and *ero* in *cecin-eram* and *cecin-ero* are at once recognized as the imperfect and the future of the auxiliary *sum*. *Can-erem* is a compound of *esem*, the original form of *essem*; *cecin-erim* of *erim* for *esim*, the full form for *sim*, with *s* changed into *r* between two vowels. In like manner *cecinissem* is a compound of *essem*.

It is scarcely necessary to explain in passing, how *esem*, the early form of the imperfect subjunctive of *sum*, can appear as *erem* in *can-erem* and as *issem* in *cecin-issem*. It is obvious that *esem* would regularly become *isem* in compounds, and then that *isem* would either become *erem* or *issem*, as it is a law of the language that *s* between two vowels generally passes into *r*, and that *i* before *s* becomes *e* before *r*. But if it be asked why the *s* is thus changed into *r* in *canerem* and yet doubled in *cecinissem*, we need only remark that a variety of treatment in the development of language is by no means uncommon. The treatment of the two letters *e* and *s* in the

inflection of the verb *sum* furnishes ample illustrations. The *e* of the root is sometimes dropped, as in *sum*, *sumus*, *sim*, *simus*, and sometimes retained, as in *est*, *estis*, *eram*, *ero*. The *s* in this verb has a three-fold treatment: it is retained unchanged in *est*, *estis*, and in *sum*, *sim*, though in the full forms, *esum* and *esim*, this would have been impossible; it is changed into *r* in *eram* and *ero;* and it is doubled in *essem*. These are indeed but illustrations of the remarkable facility with which the languages of the Indo-European family have from the simplest elements produced the most varied forms, especially in their systems of verbal inflections.

The presence of the auxiliary *es* or *fu*, even in the most primitive verbs of the language, in all the tenses for completed action and for past time, unless the perfect is an exception, naturally suggests the inquiry whether the auxiliary may not exist, though in a somewhat disguised form, even in that tense. Indeed in the subjunctive, the perfect has undoubtedly a compound form. Moreover, everywhere in the Latin verbal inflections, unless the perfect is an exception, simple forms in the indicative correspond to simple forms in the subjunctive, and compound forms in the subjunctive correspond to compound forms in the indicative; *amo*, *amem;* *rego*, *regam;* *sum*, *sim;* *eram*, *essem*—all simple forms; *can-erem*, *cane-bam;* *cecin-issem*, *cecin-eram*—all compound forms. After this uniform analogy should we not expect that *cecini*, if a simple perfect stem, would form its perfect subjunctive as the present stem *audi* forms its present subjunctive—*audi*, *audiam;* *cecini*, *ceciniam?* There surely would be no difficulty in the way of such a formation; indeed it would only be in accordance with what we find elsewhere, both in the Latin and in the cognate languages. On the other hand, from the compound *cecin-erim* we naturally infer for the indicative a perfect compounded with *sum*—a correspondence which actually appears in the third person plural, as in *cecin-erint*, a compound of *erint* for *esint*, the full form of *sint*, and *cecin-erunt*, a compound of *erunt* for *esunt*, the full form of *sunt*.

But, turning to the passive voice, we find that all the tenses for completed action are periphrastic forms, consisting of the

perfect passive participle with the auxiliary *sum*, while all the other tenses are formed directly from the active. Thus all the simple forms of the active, unless the perfect is an exception, correspond to simple forms in the passive, while all the periphrastic forms of the passive correspond to compound forms in the active, unless here again the perfect is an exception. Indeed, in examining the Latin verbal inflections, I have been surprised to find in how very many points the Latin perfects are anomalous upon the supposition that they are simple forms; and I have been scarcely less surprised to notice how completely all these irregularities disappear and how readily all these perfects conform to general laws, as soon as we recognize them as compounds of the auxiliary *sum*. I do not, however, claim that the considerations which I have thus far adduced furnish any positive proof that the auxiliary *sum* is an element in the formation of these perfects; but I do claim that they all point towards such a conclusion, and render it at least not improbable. They suggest the propriety of a critical examination of this formation to see whether traces of the auxiliary may not be discovered in it, while at the same time they anticipate any objections which might otherwise be brought against this view from the Greek and the Sanskrit perfect.

Let us then take the following examples as representatives of the several classes of Latin perfects: *esi*, *carpsi*, *cecini*, *fui*, *alui*, and *amavi*. They are inflected as follows:

1. es-i,	2. carp-s-i,	3. cecin-i,
-isti,	-s-isti,	-isti,
-it,	-s-it,	-it,
-imus,	-s-imus,	-imus,
-istis,	-s-istis,	-istis,
-erunt (*or* -ere).	-s-erunt (*or* -s-ere).	-erunt (*or* -ere).

4. fu-i,	5. al-u-i,	6. ama-v-i,
-isti,	-u-isti,	-v-isti,
-it,	-u-it,	-v-it,
-imus,	-u-imus,	-v-imus,
-istis,	-u-istis,	-v-istis,
-erunt (*or* -ere).	-u-erunt (*or* -u-ere).	-v-erunt (*or* -v-ere).

The most cursory examination of these forms reveals the fact that the endings, *i*, *isti*, *it*, etc., on the one hand present the most remarkable peculiarities, entirely without a parallel in any other tense in the Latin language, while on the other hand they preserve the most unvarying uniformity throughout all classes of Latin verbs, being precisely the same in the latest derivative as in the earliest primitive. But let us see whether our six examples are really independent forms.

Carp-s-i is simply a compound of *esi*, and its tense-sign is in the auxiliary. In *cecini* and *fui* the tense-sign originally consisted solely in the reduplication, which has been preserved in *cecini*, but lost in *fui*, though traces of it are preserved in the earlier Latin in the form *fuvi*, and in *fūi* with the long *u*. *Al-ui* for *al-fui*, and *ama-vi* for *ama-ui* or *ama-fui*, are both compounds of *fui*; *f* is dropped, and in *ama-vi* the *u* is changed into its corresponding *v* between two vowels; the tense-sign is in the auxiliary.

We have thus found that three of our six representative examples of Latin perfects are compounds of auxiliaries: *carp-s-i* of *esi*, and *al-ui* and *ama-vi* of *fui*. We may therefore dismiss these for the present from our discussion, as they will all find a complete explanation in the analysis of the auxiliaries of which they are compounded. If therefore we can explain the origin and formation of *esi*, *fui*, and *cecini*, we shall solve in full the problem of the Latin perfect. But the difficulty lies in the peculiar endings of which we have already spoken. Now the fact that such remarkable peculiarities are found with unvarying regularity in every perfect active in the language renders it quite certain that they have a common origin. In the previous paper we discovered that the forms of the Latin *esi* and of the corresponding Sanskrit *āsa* differ so widely from each other that they must have been reached by different methods. The original form from which they were both derived was probably *asasma*, from the root *as*. From this the Sanskrit forms can be reached only by dropping the first *s*, and contracting *aa* into long *a*. In the Latin, on the contrary, this *s* appears to have been retained, but before the classical forms were reached a two-fold change must have taken place.

I. The original vowel *a* of the root *as* became *e*, giving the root *es*. Moreover, this *e* was weakened to *i* in the second syllable of the reduplicated stem *esis*, a change entirely analogous to that which takes place in *cecini*, from *cano*; the *a* in the personal ending *ma* also became *i*. We thus have the form *esismi*.

II. The full form *esismi* was then gradually shortened. The steps by which this was effected were all explained in my former paper and need not be repeated here. We noticed the disappearance of *s* before *mi* and *mus*, and the dropping of the ending *mi* with the lengthening of the preceding *i* in the first person singular. We observed also the disappearance of *s* before *t* in the third person singular. Some of these changes, natural in themselves, were undoubtedly facilitated by the analogy of the other primitive perfects in which the endings *mi*, *mus*, and *t* were not preceded by *s*. The forms of *esismi*, *esisti*, etc., became *esi*, *esisti*, *esit*, *esimus*, *esistis*, *eserunt*, which are the classical forms of the auxiliary as seen in *carp-si* for *carp-esi*, *carp-sisti*, etc. We thus reached a very simple and natural explanation of the peculiar endings of *esi* and its compounds, i. e., of all perfects in *si* and *xi*.

But how are these endings to be explained in *fui* and *cecini?* They probably have, as I have already remarked, one common origin in all Latin verbs. But what do they really represent in the forms of the auxiliary *esi?* We explained *esi* itself as shortened from *esismi;* the final *i* is therefore the remnant of the simple root *es* with the personal ending *mi*. *Isti* in *esisti* is the root with the personal ending *ti*. In the same manner the endings *it*, *imus*, *istis*, and *erunt*, all consisted originally of the personal endings added to the simple root *es*. But the union of personal endings with the simple root forms the present tense, just as the union of those endings with the reduplicated root forms the perfect.

The facts just mentioned suggest the inquiry whether *fui* and *cecini* may not contain the present of the auxiliary *es*, *sum;* whether *fui*, *fuisti*, etc., may not come from *fuismi*, *fuisti*, etc., as *esi*, *esisti*, etc., from *esismi*, *esisti*, etc., and whether in the same way *cecini*, *cecinisti*, etc., may not come

from *cecinismi*, *cecinisti*, etc. Indeed, after what has been said, I scarcely see how it is possible to look at such forms as *fu-is-ti*, *fu-is-tis*, *fu-er-unt* (=*fu-is-unt*), and *cecin-is-ti*, *cecin-is-tis*, *cecin-er-unt* (=*cecin-is-unt*), without recognizing the auxiliary *es* as an element in the formation, as it lies there entirely undisguised between the root and the personal endings. *Erunt* (=*isunt*) is for *esunt*, the full form for *sunt*; *istis* is for *estis*, the second person plural of *sum*; and *isti* is for *esti*, the full form for *es*, the second person singular of *sum*.

But to this view a ready objection will be found in the fact that it is not supported by the analogy either of the Sanskrit perfect or of the Greek. This is not, however, a very formidable objection. We have already observed that the forms of the Latin *esi* differ so widely from those of the corresponding Sanskrit *āsa* that they must have been produced by a different treatment. Moreover the Sanskrit, the Greek, and the Latin, all have the root *bhu* (=*fu*) in common. From this root the Sanskrit forms *babhuva*, *babhuvitha*, *babhuva*, etc.; the Greek, πέφυκα, πέφυκας, πέφυκε, etc.; and the Latin, *fui*, *fuisti*, *fuit*, etc. It will require no argument to prove that these three sets of forms are not constructed on the same model. Neither of them preserves the original perfect of this root unchanged, though the Sanskrit undoubtedly comes nearer the original form than either of the other languages. The Greek πέφυκα contains an element, κ, not found in the Sanskrit or in the Latin, while the Latin, on the other hand, shows in *fu-is-ti*, *fu-is-tis*, and *fu-er-unt*, an element *s* or *is* not found in the Sanskrit or the Greek. The absence of the auxiliary, therefore, from the Sanskrit and the Greek perfects no more disproves its existence in *fui* than the absence of κ from the Sanskrit and the Latin disproves the existence of that letter in the Greek πέφυκα. The same remark applies to *cecini* and to all other perfects in *i*.

But what is the import and meaning, it may be asked, of *esmi* (=*sum*) as an element in the formation of *fui*, *cecini*, etc.? It is obviously no part of the tense-sign, as that is preserved in full in *cecini* and belonged originally to *fui*, as is shown by the earlier *fūi* (with long *u*) and *fuvi*. How then did it

obtain a place in the Latin perfect, and what purpose was it originally intended to serve?

A brief outline of the progressive development of the Indo-European system of verbal inflections will, I trust, throw some light upon this question. Curtius, in the last edition of his able work, "Zür Chronologie der Indo-germanischen Sprachforschung," marks three distinct epochs, or stages, in the history and growth of the system of verbal inflections in the mother-tongue of the Indo-European family, from which the Latin, the Greek, and the Sanskrit alike derived their inheritance of verbal forms.

I. The first stage consisted simply in the union of a verbal root with a pronominal root or stem. Thus from the root *da* was formed *da-ta*, Latin *dat*, 'he gives.' Of course only a few of these elemental forms have come down to our time; but the Sanskrit *as-mi*, the Greek ἐστί, and the Latin *est*, may serve as illustrations.

II. During the second period, verbal roots were developed into stems or themes in various ways, especially by the addition of the determinative *a*. These stems were then inflected like the roots of the first period by the addition of pronominal roots or stems. Thus the root *bhar* became the stem *bhara*, and *bhar-ta* became *bhara-ta*. Subsequently this *a* became in the Greek *o* or ε, as in φέρομεν, φέρετε, and in the Latin *o*, *i*, or *u*, as in *fero*, *ferimus*, *ferunt*.

III. The third period shows us for the first time compounds of the auxiliaries *as* and *ja:* as *a-dik-sam*, which became in the Sanskrit *a-dik-sham*, and in the Greek ἔδειξα; *kama-ja-mi*, which became in the Latin *ama-o*, *amo*.

These three stages in the development of verbal forms were all reached by the mother-tongue before the Latin, the Greek, the Sanskrit, or any other known language of our family had a separate existence. If now we follow out this course one step further, we shall meet in the separate languages various periphrastic forms, as the Sanskrit *ćorojam āsa* or *ćakara*, the the Greek τετελεσμένοι εἰσί, ἔχον ἐστί (= ἔχει), and the Latin *amatum iri*, *amatus sum*.

It will be observed that such compound and periphrastic

forms as *a-dik-sham*, ἔδειξα, *cecineram*, and *amatus sum*, all contain the copula, whose office is to connect the predicate with the subject. It may not, indeed, be easy to reproduce the original conception embodied in such a compound as *a-dik-sham*, but it may be rendered approximately 'then was I showing.' The copula ('was' in English) has its distinct sign. In the verbal forms of the previous periods the copula was not represented by any separate sign, though the relation of subject and predicate was undoubtedly recognised. Curtius justly remarks that a compound aorist like *a-dik-sham*, ἔδειξα, differs from a simple aorist very much as the Latin *tum dicens erat* differs from *tum dicens*. In other words, the former has an expression for the copula, while the latter has not.

Now tense-forms compounded of the auxiliary *as*, with the force of a copula, are important elements in the verbal systems alike of the Latin, the Greek, and the Sanskrit; but the regularity with which they have supplanted more primitive forms is preëminently marked in the Latin. In that language indeed they are found in every tense except the present.

If now we inquire what tense-forms were developed by the mother-tongue of the Indo-European family, I think that we shall find with Schleicher that even that primitive language probably had four simple tense-forms—a present, an imperfect, a perfect, and an aorist—and two compounded tense-forms—a future and an aorist. Now these forms, simple and compound, must have been the common inheritance of the Latin, the Greek, and the Sanskrit. Moreover, the tendency to form compounds of the auxiliary, as copula, which had already become distinctly marked before either of these languages had a separate existence, was afterwards still further carried out by the Greek and the Latin in their systems of verbal inflections. We must now examine the results of this tendency in the Latin tense-forms.

The Latin inherited a simple present which it retained to the last. It also inherited a simple imperfect, but it proceeded to form a compound of *fu* for the indicative, and of *es* for the subjunctive, as *ama-bam*, *ama-rem*. The simple forms of the imperfect gradually disappeared from the language, except *eram* and *essem* of the auxiliary. It inherited a compound

future in *so* for *sio*, as is evident from the Sanskrit and the Greek (as *dasjami*, λύσω), but it created another in *bo* for *bio* from *fu*, as *ama-bo*. It also inherited a simple reduplicated perfect; but if the view set forth in this paper is correct, it formed a compound perfect by simply adding to the reduplicated root the present indicative of *es* (*esmi* = *sum*) for the perfect indicative, and the present subjunctive (*esim* = *sim*) for the perfect subjunctive. Thus we have *cecin-ismi*, which became *cecini*, as *esismi* became *esi;* and *cecin-isim*, which became *cecin-erim*, as *esisim* became *eserim*. Thus also we have *fu-ismi*, *fui; fu-isim*, *fu-erim*. In the same manner it formed from the reduplicated root, first a compound pluperfect by appending the imperfect *eram* for the indicative and *essem* for the subjunctive: *cecin-eram*, *cecin-issem; fu-eram*, *fu-issem;* and secondly a compound future perfect by appending the future *ero: cecin-ero*, *fu-ero*. Thus from the reduplicated root, or perfect stem, were formed in the indicative a perfect, a pluperfect, and a future perfect, by appending respectively the present, the imperfect, and the future of the auxiliary *es*, and in the subjunctive a perfect and a pluperfect by appending the present and imperfect subjunctive of the same auxiliary. Thus interpreted, the Latin system of verbal inflections in the tenses for completed action is perfectly symmetrical and consistent.

But it may be claimed that *eram* and *ero* are essential elements in the formation of the pluperfect and the future perfect tenses, while the present of the auxiliary in no way aids in forming the perfect tense, inasmuch as the essential idea, that of completed action, is already expressed by the reduplication. That such an objection is not really valid will, I think, be apparent from the following considerations.

1. A simple pluperfect could have been formed from the perfect stem without the auxiliary, just as the Greek imperfect was actually formed from the present stem, and just as a simple aorist, or pluperfect, was formed from the reduplicated root in the Sanskrit. A future perfect could also have been formed from the perfect stem, just as *ero* was actually formed from *es*, i. e., by simply adding *io*. Here then the auxiliary

is not at all necessary to the formation of the tense, but is introduced for its own sake.

II. The mother-tongue of the Indo-European family very early formed a simple aorist tense directly from the root, but it subsequently formed a compound aorist by means of the auxiliary. Thus, even in that primitive age of verbal inflections, there existed side by side two forms of the same tense, an earlier form without the auxiliary or copula, and a later form with it. The Greek inherited both of these forms in its two aorists. In the same manner, in my opinion, the Latin, soon after the separation of the different branches of the family, though it already possessed a primitive perfect without the auxiliary, proceeded to form a new one with it. The cases are entirely parallel.

In this statement I of course assume, at variance with the common opinion, that the compound aorist of which I have just spoken contains the *present* and not the *imperfect* of the auxiliary. The idea of past time is expressed by the augment and need not be repeated in the auxiliary. But if this point be questioned, we may easily adduce examples in which the present of the auxiliary actually appears. That the present *sim* is an element in *cecin-erim* and *fu-erim* is a generally admitted fact; and if it be claimed that this aids in forming the mood, the obvious answer is that *sim* is in no sense a mood-sign, but a fully developed auxiliary verb; that in fact the present subjunctive of *sum* is no more necessary in the formation of the perfect subjunctive than its present indicative is in the formation of the perfect indicative. But I need not multiply illustrations or arguments upon this point, as it is generally admitted that the root *es* does appear in the ending *erunt*, for *esunt*, the full form for *sunt*, in the third person plural of the active voice of every perfect tense in the Latin language, whatever its form in other respects: *fu-erunt*, *cecin-erunt*, *dix-erunt*, *amav-erunt*. Moreover, the presence of the auxiliary is almost equally clear in the second person, singular and plural: *fu-isti*, *fu-istis*, *cecin-isti*, *cecin-istis*, *dix-isti*, *dix-istis*.

What then was the probable development of the Latin

perfect? The language undoubtedly inherited a simple reduplicated perfect, but subsequently formed a compound one, which differed from the simple form precisely as the compound aorist differed from the primitive aorist. Like the primitive perfect, it was reduplicated; but, unlike that, it contained the auxiliary *es*. This became at length the prevailing form. The changes which it subsequently underwent in accordance with a uniform tendency in language to shorten words were precisely the same as those which have been already explained in our treatment of *esi* for *esismi*. Thus were formed *fu-i* (originally reduplicated *fufu-ismi*), *ce-cin-i*, and, in fine, all perfects in *i*. The simple primitive perfect finally disappeared in all Latin verbs, except the auxiliary *esi*, which is preserved only in compounds.

The perfect formed by appending the present of *es* to the perfect stem, must, I think, in its origin have preceded the formation of perfects in *si*, *ui*, and *vi*. At this stage in the development of verbal forms, every Latin perfect probably contained a reduplicated stem and the auxiliary *es*. From this stage the transition was easy and natural to the formation of a perfect from the present or verb-stem through the aid of the perfect of the auxiliary. It is at once apparent that the perfect of the auxiliary added to the verb-stem is entirely equivalent to the present of the auxiliary added to the perfect stem. Thus, for example, in the verb *teneo* a new form *ten-ui*, consisting of the verb-stem *ten-* and the perfect *fui*, became an exact equivalent of the older form *tetini*, consisting of the perfect stem *tetin-* and the present *esmi*. Thus at length there existed side by side two equivalent compound forms, an earlier and a later. In a few verbs both of these forms have been preserved: *tetini*, *tenui*; *pepigi*, *panxi*; *peperci*, *parsi*.

Such, it seems to me, was the origin of perfects in *si*, compounded of *esi*, and perfects in *ui* and *vi*, compounded of *fui*: *carp-si* for *carp-isi*, *dixi* for *dic-isi*; *al-ui* for *al-fui*, *ama-vi* for *ama-fui*. It is, however, often assumed that these compounds were formed to supply the place of a lost reduplication. This assumption I am inclined to regard as erroneous, at least in

respect to compounds in *si*. All compound perfects indeed grew very naturally out of a tendency already developed in the mother-tongue, a tendency to which the Latin yielded more readily and more completely than the Greek or the Sanskrit; but those in *si*, *ui*, and *vi* became the favorite forms and thus supplanted most of the older reduplicated perfects. This view, I think, best accounts for the disappearance of the reduplication in so large a proportion of Latin verbs; for if the new forms were intended simply to supply the place of a lost reduplication, they would seldom have appeared in verbs which had not already lost it; yet compounds in *si*, *ui*, and *vi* existed even in the classical period side by side with reduplicated forms. Moreover, many archaic forms, as *faxit* (= *fecerit*), *axim* (= *egerim*), *taxis* (= *tetigeris*), *sponsis* (= *sposponderis*), *capsit* (= *ceperit*), show that compounds without reduplication existed long before the classical period in verbs which retained the reduplication or at least some trace of it throughout all periods of Latin literature.

But how were the other tenses for completed action formed? In accordance with the explanation already given of the formation of these tenses in verbs whose perfect ends in *si*, it is only necessary to add that those verbs which form the perfect indicative by adding *fui* to the verb-stem, generally form the pluperfect by adding *fueram*, the future perfect by adding *fuero*, the perfect subjunctive by adding *fuerim*, and the pluperfect by adding *fuissem*.

But a few forms in *asso*, *esso*, and *so*, and a few in *assim*, *essim*, and *sim*, require explanation. These forms are now generally admitted to belong respectively to the future perfect and the perfect subjunctive, notwithstanding Madvig's attempt at a different explanation. With a few exceptions, they are archaic forms, common in Plautus, but rare in the golden age, except in special connections.

I. Those in *so* and *sim* are readily explained: *dixim* = *dic-sisim* for *dic-isisim*; *duxim* = *duc-sisim* for *duc-isisim*; *auxim* = *aug-sisim* for *aug-isisim*. Here we have only the ordinary dropping of *is* before *s*, as in *dixti* = *dixisti*.

II. Those in *asso* and *assim*, which are very numerous, and

those in *esso* and *essim*, which occur only in a few verbs, are generally explained as follows: *amas-so* from *amaviso* by dropping *i* and assimilating *v*, giving first *amav-so* and then *amasso*. So *rogavisit*, *rogav-sit*, *rogassit*; *habevisit*, *habev-sit*, *habessit*. But Pott objects to this view and maintains that *amasso* cannot come from *amavi*, but only from *amasi*. No trace of any such perfect has, however, been preserved. Indeed, Curtius and Corssen both regard the perfect in *si* as unknown to derivative verbs. The words of Curtius are: "Das Perfectum auf *si* ist den abgeleiteten Stämmen fremd"; and of Corssen: "Die lateinische Sprache bildet keine Perfecte auf *si* in den auf *ā*, *ē*, *ī* auslautenden verbal Stämmen." Corssen, however, while he thus rejects the suggestion of Pott, also takes exception to the more common explanation on the ground that *v* is nowhere else assimilated to *s*. He conjectures that *v* is dropped and *s* doubled in compensation.

But the views set forth in this paper seem to me to furnish a more natural and satisfactory explanation of these peculiar forms. We have observed that the tenses for completed action in most primitive verbs are formed by appending the corresponding tenses of *esi* to the verb-stem. Now if the future perfect and the perfect subjunctive of this auxiliary be appended to verb-stems in *a* and *e*, these archaic forms are at once produced. Thus, *ama-isiso*, *amasso* (*i* dropped); *roga-isisit*, *rogassit*; *habe-isisit*, *habessit*. Whether at this time the perfect indicative ended in *si* or *vi* makes not the least difference. The tense-forms *amavi*, *amaveram*, *amavero*, etc., are entirely independent of each other. They are all produced in precisely the same manner by appending the tenses of the auxiliary to the verb stem: *ama-fui*, *ama-fueram*, *ama-fuero*. *Amavero*, therefore, is not formed from *amavi* by appending *ero*, but from *ama-* by appending *fuero*, just as *amavi* is itself formed from *ama-* by appending *fui*. Accordingly the explanation of *amasso* as from *ama-isiso*, and of *amassim* as from *ama-isisim* does not at all involve a perfect *amasi*. Such a perfect may have existed, but it is not at all necessary to our explanation. The fact that different auxiliaries may be used in forming different tenses of the same verb is fully attested by such forms as *ama bam*, *ama-rem*; *dice-bam*, *dixi*.

Our discussion seems to authorize the following conclusions:

I. The Latin, in common with all the cognate tongues of the Indo-European family, inherited a simple reduplicated perfect formed by appending the ordinary personal endings to the perfect stem, which was the root reduplicated. Among these primitive perfects was that of the auxiliary, originally *asasma*, which became in the Latin *esismi*, *esisti*, etc., finally shortened in the classical period to *esi*, *esisti*, *esit*, *esimus*, *esistis*, *eserunt* or *esere*. Thus were produced in this auxiliary the peculiar endings of the Latin perfect. From the stem *esis* were also formed all the tenses for completed action: *esismi*, *esisam* = (*e*)*s-eram*, *esiso* = (*e*)*sero*, *esisim* = (*e*)*serim*, *esissem*, just as from *es* were formed *esmi* = *sum*, *esam* = *eram*, etc. This, the original type of the Latin perfect, has not been preserved except in *esi*, a form used only in compound perfects in *si*: *carp-si*, *dixi*, etc.

II. The Latin, at a very remote period, formed a compound reduplicated perfect, together with all the other tenses for completed action, by appending the auxiliary *es* to the perfect stem. Thus *cecin-ismi* (= *cecini*), *cecin-eram*, *cecin-ero*, etc.; *fufu-ismi* (= *fufui*), *fufu-eram*, *fu-fuero*. But the auxiliary *fufui* finally lost the reduplication and became *fui*, *fueram*, etc. To this class belong all Latin perfects in *i*.

III. The Latin finally formed a new compound perfect, together with the other tenses for completed action, by appending the perfect of the auxiliary, together with its other tenses for completed action, to the verb stem, rarely to the present stem. Thus:

1. Most consonant stems appended the auxiliary *esi* with its other tenses for completed action: *carp-si*, *carp-s-eram*, etc.; *dix-i*, *dix-eram*.

2. *A*, *e*, and *i* stems and some consonant stems appended the auxiliary *fui* with its tenses: *amavi*, *delevi*, *audivi*, *alui*, *rapui*.